TEST REPORT

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1. Client

- Name : Samsung Electronics Co., Ltd.
- Address : 129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Rep. of Korea
- Date of Receipt : 2024-12-10

2. Use of Report : Certification

3. Name of Product and Model : Tablet PC
- Model Number : SM-X358U
- Manufacturer and Country of Origin : Samsung Electronics Co., Ltd. / Vietnam

4. FCC ID : A3LSMX358U

5. Date of Test : 2025-01-23

6. Location of Test : ■ Permanent Testing Lab □ On Site Testing
(Address: 65, Sinwon-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Korea)

7. Test Standards : KDB Publication

8. Test Results : Refer to the test result in the test report

	Tested by	Technical Manager
Affirmation	Name : Dongkyu Kim (Signature)	Name : Jongwon Ma (Signature)

2025-03-25

Eurofins KCTL Co.,Ltd.

REPORT REVISION HISTORY

Date	Revision	Page No
2025-03-25	Originally issued	-

General remarks for test reports

Statement concerning the uncertainty of the measurement systems used for the tests

(may be required by the product standard or client)

☐ **Internal procedure used for type testing through which traceability of the measuring uncertainty has been established:**

Procedure number, issue date and title:

Calculations leading to the reported values are on file with the testing laboratory that conducted the testing.

☒ **Statement not required by the standard or client used for type testing**

1. Identification when information is provided by the customer: Information marked " # " is provided by the customer. - Disclaimer: This information is provided by the customer and can affect the validity of results.

CONTENTS

1. General information

Client	:	Samsung Electronics Co., Ltd.
Address	:	129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Rep. of Korea
Manufacturer	:	Samsung Electronics Co., Ltd.
Address	:	129, Samsung-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Rep. of Korea
Laboratory	:	Eurofins KCTL Co.,Ltd.
Address	:	65, Sinwon-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, 16677, Korea
Accreditations	:	FCC Site Designation No: KR0040, FCC Site Registration No: 687132 VCCI Registration No. : R-3327, G-198, C-3706, T-1849 CAB Identifier: KR0040, ISED Number: 8035A KOLAS No.: KT231

1.1 Report Overview

This report details the results of testing carried out on the samples listed in section 2, the results contained in this test report do not relate to other samples of the same product. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

This report may only be reproduced and distributed in full. If the product in this test report is used in any configuration other than that detailed in the test report, the manufacturer must ensure the new configuration complies with all relevant standards and certification requirements. Any mention of Eurofins KCTL Co.,Ltd. Wireless lab or testing done by Eurofins KCTL Co.,Ltd. Wireless lab made in connection with the distribution or use of the tested product must be approved in writing by Eurofins KCTL Co.,Ltd. Wireless lab.

2. Device information

Product Name	Tablet PC
Product Model Number	SM-X358U
Product Manufacturer	Samsung Electronics Co., Ltd.
Product Serial Number	R32Y1001ZZE
Mode of Operation	Digitizer
Tx Frequency	531.25 kHz: S-pen digitizer(Button) 562.50 kHz: S-pen digitizer(Pen tip) 593.75 kHz: S-pen digitizer(Eraser)
Antenna Type	Internal type
Summary of Test Results	
RF Exposure	Highest H-Field (A/m)
Uncontrolled Exposure Limit	1.63
Digitizer	0.50

3. System Description and Setup

DASY6 Module WPT is optimized for evaluating compliance of inductive Wireless Power Transfer (WPT) systems and any other magnetic-field sources operating in the 3 kHz–4MHz frequency range. Module WPT V2.0+ has been extended for easy evaluations of pulsed sources.

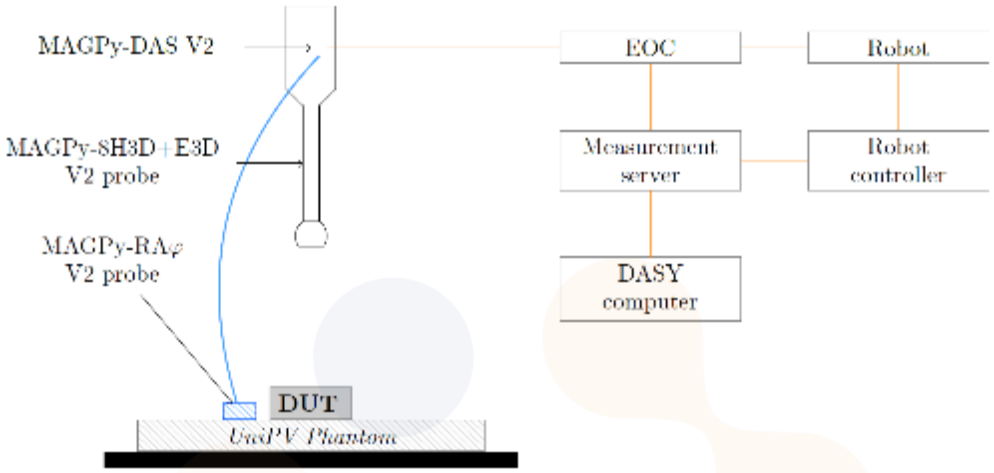
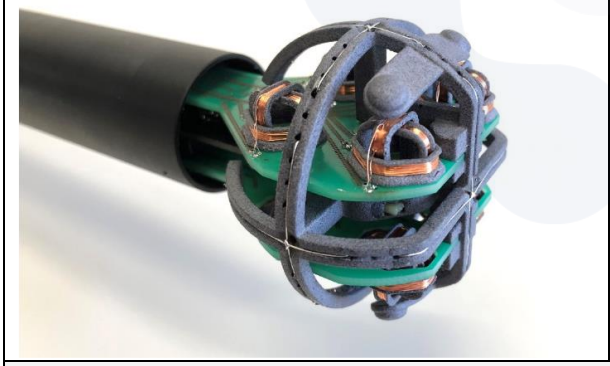


Figure : Typical measurement setup with DASY6 Module WPT

MAGPy-8H3D+E3D V2 Probe

The MAGPy-8H3D+E3D V2 probe consists of eight isotropic H-field sub-probes and one isotropic E-field sub-probe that are all integrated inside the probe head with a flat tip. Each isotropic H-field sub-probe is comprised of three concentric orthogonal loop coil sensors. The isotropic E-field sub-probe is composed of three orthogonal sensors (x and y sensors are dipoles, and the sensor measuring the z component is a monopole). In total, the MAGPy-8H3D+E3D V2 probe contains 27 sensors that measure in the time domain.



Probe design	
Probe head diameter	60mm
H-field sub-probes	8 isotropic H-field sub-probes
E-field sub-probes	1 isotropic E-field sub-probe
Temperature range	0–40 °C
Dimensions	110 mm × 635 mm × 35 mm
H-field measurement specifications	
Frequency range	3 kHz – 10 MHz
Dynamic range	0.1 3 200 A/m (0.12 µT–4 mT)
E-field measurement specifications	
Frequency range	3 kHz – 10 MHz
Dynamic range	0.08 – 2 000 V/m

Software V2.6+

The MAGPy software (SW) V2.6+ is easy to use via its intuitive GUI installed on the tablet PC. The following is displayed in real-time:

- Status bar (SW version, device/tablet battery statuses)
- Evaluation frequency & bandwidth
- Safety standard (RL and BR)
- Induced E-field/current density & SAR
- Time-domain 3D E-field (switchable to FFT spectrum)
- Time-domain 3D H-field (switchable to FFT spectrum)
- Time-domain H-field gradient
- Settings (recording, snapshot / replay option, standard selection, etc.)

4. Measurement uncertainty

DASY6 Uncertainty Budget for Peak Incident H-field according to IEC/IEEE 63184						
Item	Error Description	Unc. Value (±dB)	Probab. Distr.	Div.	(ci)	Std. Unc. (±dB)
Measurement system						
1	Amplitude calibration uncertainty	0.35	N	1	1	0.35
2	Probe anisotropy	0.60	R	√3	1	0.35
3	Probe dynamic linearity	0.20	R	√3	1	0.12
4	Probe frequency domain response	0.30	R	√3	1	0.17
5	Probe frequency linear interp. fit	0.15	R	√3	1	0.09
6	Spatial averaging	0.10	R	√3	1	0.06
7	Parasitic E-field sensitivity	0.10	R	√3	1	0.06
8	Detection limit	0.15	R	√3	1	0.09
9	Readout electronics	0.00	N	1	1	0.00
10	Probe positioning	0.19	N	1	1	0.19
11	Repeatability	0.10	N	1	1	0.10
12	Surface field reconstruction	0.10	N	1	1	0.30
Combined uncertainty (k = 1)						0.67
Expanded uncertainty (k = 2)						**1.33(16.6%)**

DASY6 Uncertainty Budget for Peak Incident E-field according to IEC/IEEE 63184						
Item	Error Description	Unc. Value (±dB)	Probab. Distr.	Div.	(ci)	Std. Unc. (±dB)
Measurement system						
1	Amplitude calibration uncertainty	0.53	N	1	1	0.53
2	Probe anisotropy	0.80	R	√3	1	0.46
3	Probe dynamic linearity	1.00	R	√3	1	0.58
4	Probe frequency domain response	0.30	R	√3	1	0.17
5	Probe frequency linear interp. fit	0.15	R	√3	1	0.09
6	Parasitic H-field sensitivity	0.20	R	√3	1	0.12
7	Detection limit	0.15	R	√3	1	0.09
8	Readout electronics	0.00	N	1	1	0.00
9	Repeatability	0.10	N	1	1	0.10
Combined uncertainty (k = 1)						0.95
Expanded uncertainty (k = 2)						**1.89 (24.4%)**

The uncertainties of Incident E/H field used the data provided by Equipment manufacturer.

5. Maximum Exposure Limit

5.1. Electric and magnetic field strength levels

According to KDB 680106(refer to § 1.1310 Limits for MPE) , The electric and magnetic field strength reference levels for devices employed by the general public (uncontrolled environment) and controlled-use devices (controlled environment).

Frequency (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm^2)	Averaging time (minutes)
(i) Limits for Occupational/Controlled Exposure				
0.3-3.0	614	1.63	*(100)	≤6
3.0-30	1842/f	4.89/f	*($900/f^2$)	≤6
30-300	61.4	0.163	1.0	≤6
300-1,500			f/300	≤6
1,500-100,000			5	≤6
(ii) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*(100)	<30
1.34-30	824/f	2.19/f	*($180/f^2$)	<30
30-300	27.5	0.073	0.2	<30
300-1,500			f/1500	<30
1,500-100,000			1.0	<30

f = frequency in MHz. * = Plane-wave equivalent power density.

Table 1. § 1.1310(e)(1)—Limits for Maximum Permissible Exposure

6. Measurement Configurations

6.1 Test Methods and Procedures

The tests documented in this report were performed in accordance with standards and the following information procedures:

- 447498 D04 General RF Exposure Guidance v01
- 680106 D01 Wireless Power Transfer v04
- DASY6 MODULE WPT SYSTEM HANDBOOK(May 24, 2024)
- DASY8/6 Modules SAR & WPT APPLICATION NOTE(R3 05/24)
- April 2024 TCB Workshop Notes (WPT update)

6.2 Operating States

With the digitizer function activated by S-Pen, the operating mode frequencies are as follows:

Mode	Frequency [kHz]	Operation states
Digitizer	531.25	S-pen digitizer(Button)
	562.50	S-pen digitizer(Pen tip)
	593.75	S-pen digitizer(Eraser)

6.3 Test configuration

6.3.1 Test Mode Configuration

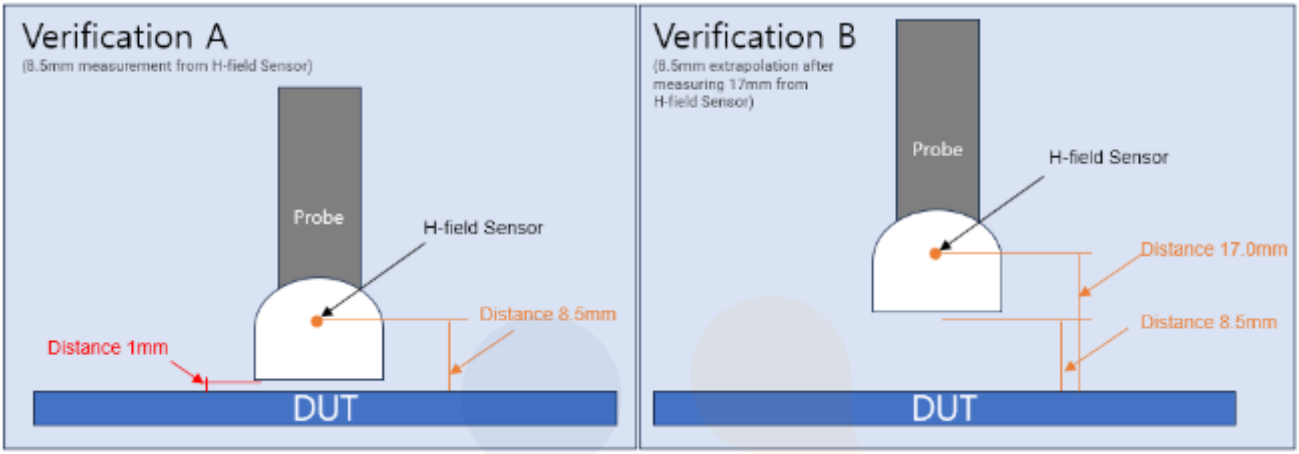
RF Exposure Conditions	Mode	Test Freq. [kHz]	EUT Position	Distance (mm)
H-field	Digitizer	531.25	Front	0
		562.50		
		593.75		

Notes

1) Digitizer tests were performed at 100% duty in the FTM mode provided by the manufacturer.
2) Digitizer is a function that operates on the front position, so only that front position was tested.
3) The distance between the EUT surface and the probe sensing element (H-field) was measured as 8.5 mm, and the result was extrapolated to 0 mm.
(For detailed verification procedures, see section 6.3.2)

6.3.2 Extrapolation Verification

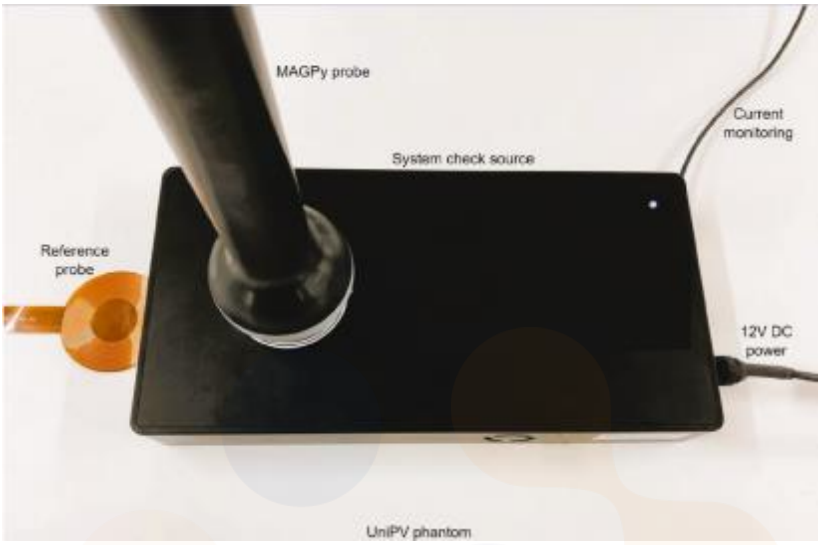
In order to apply extrapolation using the SPEAG MAGPy equipment, the validity of the equip ment was verified by applying the procedure in Section 3.3 of KDB 680106D01v04.



Verification A&B results should be within 30 % at 8.5 mm distance according to KDB 680106 D01v04.

7. System Verification

7.1 Test System Verification



System check and verification sources are designed as well-defined sources for verifying that the measurement system is operational and repeatable for the intended measurements and for validating that the system works within its specification. A system check is typically performed prior to any compliance evaluation. It is recommended to perform a system check before any compliance testing with the V-Coil source that operates at the frequency closest to that of the DUT. These sources consist of series resonant spiral coils, fed with an integrated current source. The current source consists of an oscillator and an amplifier at the appropriate frequency. A monitoring port in the form of a SMB connector is available on the device to monitor the current through the coil.

V-Coil	Date	Frequency (㎑)	Distance (㎜)	Target H-Field (A/m)	Measured H-Field (A/m)	Deviation		Unc.[k=2]
						[㏈]	[%]	[dB]
V-Coil50/400 S/N : 1026	2025-01-23	400	2	222.0	217.0	-0.099	-2.25	1.33

7.2 Measurement date and environment

Shield room	Date	Environment	
		Temperature (°C)	Humidity (%)
8F - 3	2025-01-23	21.2 ~ 21.4	43.2 ~ 48.9

8. Digitizer Test Results

8.1 H-Field strength results

RF Exposure Conditions	Mode	EUT Position	Distance (mm)	Frequency (㎑)	Duty Factor	Extrapolated H-Field (A/m)	Scaled H-Field (A/m)	Reference Level, (A/m, RMS)	Plot No.
H-Field	S-pen Digitizer (Button)	Front	0	531.25	0.20	2.38	0.476	1.63	
	S-pen Digitizer (Pen tip)	Front	0	562.50	0.20	2.44	0.488		
	S-pen Digitizer (Eraser)	Front	0	593.75	0.20	**2.51**	**0.502**		**1**

Note:
1) The H-field measurements are extrapolated to 0 mm.
2) Digitizer tests were scaled down to the maximum duty for actual use in FTM Mode (100% Duty) provided by the manufacturer.

8.2 Extrapolation Verification results

RF Exposure Conditions	Mode	EUT Position	Verification No.	Distance (mm)	Frequency (㎑)	Measured Result at 8.5mm (A/m)	Extrapolated Result at 8.5 mm (A/m)	Dev. [%]	Plot No.
H-Field	S-pen Digitizer (Button)	Front	A	8.5	593.75	1.04	-	-27.69	2
		Front	B	17.0	593.75	-	0.752		3

Note: According to KDB 680106D01v04 Section 3.3, the extrapolation validity was verified as the difference between the two results is within 30%.

9. TER Analysis

EUT Position	MPE-based	SAR-based		TER	Limit
	Digitizer	Body 1g	Extremity 10g		
Front	0.31	-	0.00	0.31	1.0

Note:
1) For SAR-based Body exposure(1g SAR), TER analysis was exempted due to the front-side exclusion of KDB 616217 D04.
2) For SAR-based Extremity (10 g SAR) exposure, the NFC mode of the Part 1 report was considered.

10. Test Equipment Information

Test Platform	SPEAG DASY6 System			
S/W Version	cDASY6 Module WPT V2.6.0.5002			
Location	Eurofins KCTL Co.,Ltd. 65, Sinwon-ro, Yeongtong-gu, Suwon-si, Gyeonggi-do, Korea			
Manufacture	SPEAG			
Hardware Reference				
Equipment	Model	Serial Number	Date of Calibration	Due date of next Calibration
DASY6 Controller	CS8C speag TX90XL	F/18/0004968/C/001	-	-
DASY6 Robot	TX90XL speag	F/18/0004968/A/001	-	-
Emergency stop	MAGPy-ES	1033	-	-
MAGPy Probe	MAGPy 8H3D+3Dv2	3085	2024-03-20	2025-03-20
Verification Sources	V-coil 50/400	1026	2024-04-02	2025-04-02
Humidity/Temp	PC-5400TRH	PC-5400TRH-4	2024-11-06	2025-11-06
Spectrum Analyzer	FSG13	100051	2024-07-02	2025-07-02
Loop Antenna	HFH2-Z2	100355	2024-06-25	2026-06-25

Appendixes List

Appendix A	System check Plot
Appendix B	Measurement Plot
Appendix C	Calibration Certificate C.1 Probe Calibration Certificate C.2 V-Coil Calibration Certificate (V-Coil 50/400)
Appendix D	EUT Photo
Appendix E	Test Setup Photo